

IN THE CLAIMS

Please add the following claims:

1. (original) A binocular having digital image storage function, comprising:

a binocular including two body tubes, each of which being separately provided at two ends with an objective lens and an eyepiece, and a prism being disposed between said objective lens and said eyepiece; and

a digital image storage unit being located between said two body tubes and including at least an image sensor for taking an image, a shutter key for controlling said taking of image by said image sensor, a driver and a microprocessor for compressing an image taken by said image sensor and storing said compressed image in a memory; and

said binocular and said digital image storage unit having parallel optical axes, so that an image taken by said digital image storage unit is the same as a picture being seen by a user via said binocular, enabling the user to take desired images with said digital image storage unit.

2. (original) The binocular having digital image storage function as claimed in claim 1, wherein said digital image storage unit further includes an audio signal processing system, in which a microphone receives an audio signal that is converted into a digital signal at an analog/digital conversion circuit and then sent to said microprocessor, so that said converted audio signal is compressed and stored in said memory.

3. (original) The binocular having digital image storage function as claimed in claim 1, wherein said image taken by said digital image storage unit is output to a personal computer via a universal serial bus.

4. (original) The binocular having digital image storage function as claimed in claim 2, wherein said image and said audio signal taken and received by said digital image storage unit are output to a personal computer via a universal serial bus.

5. (original) The binocular having digital image storage function as claimed in claim 1, wherein said binocular further comprises a semitransparent reflection mirror disposed in front of a focus of one said eyepiece at a 45-degree angle relative to an optical axis of said eyepiece, and said digital image storage unit including a mini liquid crystal display (LCD) panel disposed at a point immediately below said focus corresponding to said reflection mirror, so that said image taken by said digital image storage unit is displayed on said mini LCD through a driver; and wherein said digital image storage unit further comprises a push button for controlling a display status of said mini LCD; whereby when a user views at said eyepieces while a display power is cut off, what being seen by the user is the same as an image that could be seen with an ordinary binocular, and when the user views at said eyepieces while a display power key is held in a depressed position and a front side of said objective lenses is shielded with one hand, what being seen by the user is a magnified image on said mini LCD, that is, an image exactly taken by said digital image storage unit.

6. (original) The binocular having digital image storage function as claimed in claim 2, wherein said binocular further comprises a semitransparent reflection mirror disposed in front

of a focus of one said eyepiece at a 45-degree angle relative to an optical axis of said eyepiece, and said digital image storage unit including a mini liquid crystal display (LCD) panel disposed at a point immediately below said focus corresponding to said reflection mirror, so that said image taken by said digital image storage unit is displayed on said mini LCD through a driver; and wherein said digital image storage unit further comprises a push button for controlling a display status of said mini LCD; whereby when a user views at said eyepieces while a display power is cut off, what being seen by the user is the same as an image that could be seen with an ordinary binocular, and when the user views at said eyepieces while a display power key is held in a depressed position and a front side of said objective lenses is shielded with one hand, what being seen by the user is a magnified image on said mini LCD, that is, an image exactly taken by said digital image storage unit.

7. (original) The binocular having digital image storage function as claimed in claim 1, wherein said binocular has optical specifications suitable for observing a mid-range scene about 50 to 200 meters away, and all or some of said objective lenses and said eyepieces being made of plastic lenses; and said optical specifications for said binocular including:

Magnifying power: within the range from 5X to 8X;

Clear aperture: within the range from 15 to 25mm;

Length-to-breadth ratio of field of view: 4:3; and

Diagonal view angle: within the range from 5 to 7 degrees.

8. (original) The binocular having digital image storage function as claimed in claim 1, wherein said binocular has a rectangular field of view, and said rectangular field of view having a length-to-breadth ratio of 4:3 which is the same as that of said image sensor in said digital image storage unit.

9. (new) A binocular telescope comprising:

- a first body tube having a first eyepiece and a first objective lens, said first eyepiece located at a proximate end of said first body tube and said first objective lens being located at a distal end of said first body tube;
- a second body tube having a second eyepiece and a second objective lens, said second eyepiece being located at a proximate end of said second body tube and said second objective lens being located at a distal end of said second body tube, said second body tube being oriented substantially parallel to said first body tube, said first and second body tubes oriented along a first optical axis to provide a first field of view, said first and second objective lenses each having a focal length for focusing on objects at mid range; and,
- a digital image storage unit having an image sensor for capturing an image, said image sensor located along a second optical axis, said digital image storage unit located between said first and second body tubes, said second optical axis being separate from said first optical axis, said digital image storage unit providing a second field of view which is substantially similar to said first field of view.

10. (new) The binocular telescope of claim 9, wherein said digital image storage unit further includes a memory for storing said image.

11. (new) The binocular telescope of claim 10, wherein said memory is flash memory.
12. (new) The binocular telescope of claim 9, wherein said digital image storage unit further comprises:
- a microphone to receive an analog audio signal;
 - an analog-to-digital conversion circuit, coupled to said microphone, to convert said analog audio signal to a digital audio signal; and,
 - a memory, coupled to an output of said analog-to-digital conversion circuit, for storing said digital audio signal.
13. (new) The binocular telescope of claim 12, wherein said digital audio signal is provided to a personal computer.
14. (new) The binocular telescope of claim 9, further comprising a port to be connected to a personal computer, where said image is provided to a personal computer from said digital image storage unit through said port.
15. (new) The binocular telescope of claim 14, wherein said port is a universal serial bus port.

16. (new) The binocular telescope of claim 9, further comprising a display panel coupled to said digital image storage unit, said display panel to display said image from said image sensor of said digital image storage unit.

17. (new) The binocular telescope of claim 16, wherein said display panel is a liquid crystal display (LCD) panel.

18. (new) The binocular telescope of claim 16, further comprising a semitransparent reflective element, where said image displayed on said display panel is viewable through at least one of said first and second eyepieces by orienting said reflective element along said first optical axis, orienting said display panel substantially perpendicular to said first optical axis, and directing said image as displayed on said display panel in the direction of said at least one of said first and second eyepieces using said reflective element.

19. (new) The binocular telescope of claim 18, further comprising a first viewing mode and a second viewing mode, said image to be displayed on said display panel during said first viewing mode, and said image to not be displayed on said display panel during said second viewing mode.

20. (new) The binocular telescope of claim 19, wherein during said first viewing mode, at least one of said first and second objective lenses is shielded and the image displayed on said display panel is the only image viewable through a corresponding one of said first or second eyepieces.

21. (new) A method of viewing an image, having a first field of view, comprising:
viewing the image using (i) a first body tube having a first eyepiece and a first objective lens, said first eyepiece located at a proximate end of said first body tube and said first objective lens being located at a distal end of said first body tube, and (ii) a second body tube having a second eyepiece and a second objective lens, said second eyepiece being located at a proximate end of said second body tube and said second objective lens being located at a distal end of said second body tube, said second body tube being oriented substantially parallel to said first body tube, said first and second body tubes being oriented along a first optical axis, said first and second objective lenses each having a focal length for focusing on objects at mid range; and
capturing the image, said image having a second field of view substantially the same as said first field of view, through an image sensor located in a digital image storage unit, said image sensor located along a second optical axis, said digital image storage unit being located between said first and second body tubes, said second optical axis being separate from said first optical axis.

22. (new) The method of claim 21, further comprising storing said image in a digital format in a memory of said digital image storage unit.

23. (new) The method of claim 22, wherein said memory is flash memory.

24. (new) The method of claim 21, further comprising:
receiving an analog audio signal;
converting said analog audio signal to a digital audio signal; and,
storing said digital audio signal in a memory of said digital image storage unit.

25. (new) The method of claim 24, further comprising providing said digital audio signal to a personal computer.

26. (new) The method of claim 21, further comprising providing said image to a personal computer.

27. (new) The method of claim 26, wherein said image is provided to said personal computer through a universal serial bus connection.

28. (new) The method of claim 21, further comprising providing said image from said image sensor of said digital image storage unit to a display panel, and displaying said image on said display panel.

29. (new) The method of claim 28, wherein said display panel is a liquid crystal display (LCD) panel.

30. (new) The method of claim 28, further comprising viewing said image displayed on said display panel through at least one of said first and second eyepieces by orienting a semitransparent reflective element along said first optical axis, orienting said display panel substantially perpendicular to said first optical axis, and directing said image as displayed on said display panel in the direction of said at least one of said first and second eyepieces using said reflective element.

31. (new) The method of claim 30, further comprising switching from a first viewing mode to a second viewing mode, where said image is displayed on said display panel during said first viewing mode, and said image is not displayed on said display panel during said second viewing mode.

32. (new) The method of claim 31, wherein during said first viewing mode, at least one of said first and second objective lenses is shielded and the image displayed on said display panel is the only image viewable a corresponding one of said first or second eyepieces.

33. (new) The method of claim 21, wherein in said field of view is substantially a rectangular field of view.

34. (new) The method of claim 33, further comprising providing said image to a personal computer, said image to be displayable by said personal computer in said rectangular field of view.

35. (new) A binocular telescope comprising:
a first body tube having a first eyepiece and a first objective lens, said first eyepiece located at a proximate end of said first body tube and said first objective lens being located at a distal end of said first body tube;
a second body tube having a second eyepiece and a second objective lens, said second eyepiece being located at a proximate end of said second body tube and said second objective lens being located at a distal end of said second body tube, said second body tube being

oriented substantially parallel to said first body tube, said first and second body tubes oriented along a first optical axis to provide a first field of view;

a digital image storage unit having an image sensor for capturing an image, said image sensor located along a second optical axis, said digital image storage unit being located between said first and second body tubes, said second optical axis being separate from said first optical axis, said digital image storage unit providing a second field of view which is substantially similar to said first field of view;

a display panel coupled to said digital image storage unit, said display panel to display said image from said image sensor of said digital image storage unit; and

a semitransparent reflective element oriented along said first optical axis, where said image displayed on said display panel is viewable through at least one of said first and second eyepieces by orienting said display panel substantially perpendicular to said first optical axis, and directing said image as displayed by said display panel towards said at least one of said first and second eyepieces using said reflective element.

36. (new) The binocular telescope of claim 35, wherein said digital image storage unit further includes a memory for storing said image.

37. (new) The binocular telescope of claim 35, further comprising a port to be connected to a personal computer, where said image is provided to a personal computer from said digital image storage unit through said port.

38. (new) The binocular telescope of claim 35, further comprising a first viewing mode and a second viewing mode, where said image is displayed on said display panel during

said first viewing mode, and said image is not displayed on said display panel during said second viewing mode.

39. (new) The binocular telescope of claim 38, wherein during said first viewing mode, one of said first or second objective lenses is shielded and the image displayed on said display panel is the only image viewable through a corresponding one of said first or second eyepieces.

40. (new) A method of viewing an image, having a field of view, comprising:
viewing the image using (i) a first body tube having a first eyepiece and a first objective lens, said first eyepiece located at a proximate end of said first body tube and said first objective lens being located at a distal end of said first body tube, and (ii) a second body tube having a second eyepiece and a second objective lens, said second eyepiece being located at a proximate end of said second body tube and said second objective lens being located at a distal end of said second body tube, said second body tube being oriented substantially parallel to said first body tube, said first and second body tubes being oriented along a first optical axis;
capturing the image, said image having a second field of view substantially the same as said first field of view, through an image sensor located in a digital image storage unit, said digital image storage unit being located between said first and second body tubes, said second optical axis being separate from said first optical axis;
displaying said image from said image sensor on a display panel; and
orienting a semitransparent reflective element along said first optical axis,
orienting said display panel substantially perpendicular to said first optical axis,
and

directing said image displayed on said display panel towards at least one of said first and second eyepieces using said reflective element.

41. (new) The method of claim 40, further comprising storing said image in a digital format in a memory of said digital image storage unit.

42. (new) The method of claim 40, further comprising providing said image to a personal computer.

43. (new) The method of claim 40, further comprising switching from a first viewing mode to a second viewing mode, where said image is displayed on said display panel during said first viewing mode, and said image to not be displayed on said display panel during said second viewing mode.

44. (new) The method of claim 43, wherein during said first viewing mode at least one of said first and second objective lenses is shielded and the image displayed on said display panel is the only image viewable through a corresponding one of said first or second eyepieces.